

REMARKS

Claims 15 and 21-23 remain in the application with claim 15 amended to emphasize that the claimed structure is a silicon on insulator (SOI) semiconductor device. Accordingly, amendment to the Title of the invention is respectfully requested.

Consideration is respectfully requested for claims 15 and 21-23 as amended and in view of the following remarks.

The Examiner has finally rejected claims 15 and 21-23 under 35 USC § 103(a) as being unpatentable over previously cited Lin, 6,483,147 in view of newly cited Takahashi et al., 5,475,254. The Examiner refers to Figs. 7 and 8 of Lin as showing the claimed structure, except as noted by the Examiner, Lin does not disclose the metal abutting the silicon oxide layer and the silicon oxide layer electrically insulating the metal layer from the semiconductor component. The Examiner refers to Takahashi et al. as disclosing a structure in which a silicon oxide layer 22 electrically insulates a gold plated layer 28 from a component 23, as shown in Fig. 3 of Takahashi et al.

It is respectfully believed that this rejection is in error. As previously noted, Lin places the metal heat sink through substrate 12 and through silicon oxide insulating layer 34 and in direct contact with the silicon layer 32 in which a semiconductor component is formed. Lin is apparently concerned with providing the metal heat sink in very close proximity to the device layer without concern for electrical isolation. As previously noted, this feature is specifically claimed by Lin, in particular reciting, "a conductive plug through the silicon substrate layer and the insulation layer contacting the silicon device layer, wherein the conductive plug extends into the silicon device layer".

Takahashi et al. are not concerned with a silicon on insulator (SOI) semiconductor device, as claimed, nor does Takahashi et al. disclose a semiconductor component formed in a silicon layer. It will be noted that in Takahashi et al. the heat generating component is a thin-film titanium nitride (TiN) resistor which is not semiconductor material and is not a semiconductor component. Note that claim 15 (b) specifies "a semiconductor component formed in the silicon layer overlying a portion of the substrate in which silicon has been removed by etching". In Takahashi, the thin film resistor is formed directly on an insulating layer overlying a semiconductor substrate, and not as part of an SOI structure. Thus, it is respectfully submitted that Takahashi et al. is unrelated to the claimed invention and also unrelated to the SOI structure of Lin. An SOI structure always involves an active silicon single crystal layer on top of

an insulator that is sitting on top of a silicon/semiconductor substrate. This is present in Lin and in the claimed invention, but not in Takahashi et al. Note also that the claimed silicon on insulator semiconductor device of claim 15 includes a) a semiconductor body including a silicon supporting substrate, a silicon oxide layer supported by the substrate, and a silicon layer overlying the silicon oxide layer. This is an SOI structure and is not shown by Takahashi et al.

Accordingly, it is respectfully submitted that any reconstruction of the Lin SOI structure would not be obvious from the thin film resistor structure of Takahashi et al. which is unrelated to SOI devices and fabrication.


Since the silicon on insulator (SOI) semiconductor device as defined by claims 15, and 21-23 are patentable under 35 USC § 103(a) over Lin in view of Takahashi et al., all as above set forth, it is requested that claims 15 and 21-23 be allowed and the case advanced to issue.

Applicant believes that all pending claims are allowable and respectfully requests a Notice of Allowance for this application from the Examiner. Should the Examiner have any question concerning the present amendment and response, a telephone call to the undersigned attorney is requested.

If there are any issues remaining which the Examiner believes could be resolved through either a Supplemental Response or an Examiner's Amendment, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for an extension of time which may be required to maintain the pendency of this case, and any required fee for such extension or any further fee required in connection with the filing of this Amendment is to be charged to Deposit Account No. 500388 (Order No. CREEP027).

Respectfully submitted,
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